We claim:

1. A method of detecting a malignant tumor in a human subject, comprising:

(a) collecting a sample of a bodily substance containing human nucleic acid or protein, said nucleic acid or protein having originated from cells of the human subject;

(b) detecting quantitatively or semi-quantitatively in the sample a level of expression for laminin α4 subunit protein or laminin α4-specific mRNA; and

(c) comparing the expression level in (b) to a level of expression in a normal control, wherein overexpression of laminin α4 subunit protein or laminin α4-specific mRNA, with respect to the control, indicates the presence of a malignant tumor in the human subject.

2. The method of Claim 1, wherein the substance is blood, urine, lymph, cerebro-spinal fluid, skin, stroma, vascular epithelium, oral epithelium, vaginal epithelium, cervical epithelium, uterine epithelium, intestinal epithelium, bronchial epithelium, esophageal epithelium, or mesothelium.

3. The method of Claim 1, wherein the substance is a tissue sample.

4. The method of Claim 3, wherein the tissue sample is collected from the brain of the subject.

5. The method of Claim 3, wherein the tissue sample is a tumor tissue.

6. The method of Claim 1, wherein the bodily substance is plasma.

7. The method of Claim 1, wherein the bodily substance is a cellular material.

8. The method of Claim 7, wherein the cellular material is derived from the human subject's brain kidney, bladder, ureter, urethra, thyroid, parotid gland, submaxillary gland, sublingual gland, lymph node, bone, cartilage, lung, mediastinum, breast, uterus, ovary, testis, prostate, cervix uteri, endometrium, pancreas, liver, spleen, adrenal, esophagus, stomach, or intestine.

9. The method of Claim 1, wherein the neoplastic growth is a carcinoma, sarcoma, lymphoma, mesothelioma, melanoma, glioma, nephroblastoma, glioblastoma, oligodendroglioma, astrocytoma, ependymoma, primitive neuroectodermal tumor, atypical meningioma, malignant meningioma, or neuroblastoma.

10. The method of Claim 1, wherein the hyperplastic and/or cytologically dysplastic cellular growth or proliferation is benign prostatic hyperplasia/dysplasia or cervical hyperplasia/dysplasia.

11. The method of Claim 1, wherein the level of expression of laminin α4 subunit protein is detected.

12. The method of Claim 1, wherein the level of expression of *laminin α4*-specific mRNA is detected.

13. The method of Claim 12, wherein the expression level of *laminin α4*-specific mRNA is detected by measuring RNA.

14. The method of Claim 12, wherein the expression level of *laminin α4*-specific mRNA is detected by measuring cDNA.

15. The method of Claim 12, wherein a gene expression microarray is used to detect the level of expression of *laminin α4*-specific mRNA.

16. The method of Claim 1, further comprising detecting the overexpression of laminin β1 subunit protein or *laminin β1*-specific mRNA relative to the normal control.

17. The method of Claim 1, further comprising detecting quantitatively or semi-quantitatively in the sample a level of expression with respect to a normal control, of a gene encoding a protein selected from the group consisting of insulin-like growth factor binding protein precursor 3, transforming growth factor-β-induced gene, vascular endothelial growth factor, connective tissue growth factor, human insulin-like growth factor binding protein precursor 5, placental growth factor, transcription factor Ap-2, human insulin-like growth factor II, epidermal growth factor receptor, matrix metalloproteinase-2, keratin 18, vimentin, fibronectin 1, phospholipase A2 receptor, desmoplakin, tropomodulin, tenascin C, and collagen type IV α1 chain, or detecting a combination of expression levels for any of these.

18. A method of diagnosing the presence of a glioma in a human subject, comprising:

(a) obtaining a sample from the brain of the human subject;

(b) detecting quantitatively or semi-quantitatively in the sample a level of expression for laminin α4 subunit protein or *laminin α4*-specific mRNA; and

(c) comparing the expression level in (b) to a level of expression in a normal control, wherein overexpression of laminin α4 subunit protein or *laminin α4*-specific mRNA, with respect to the control, indicates the presence of glioma in the subject.

19. The method of Claim 18, wherein the level of expression of laminin α4 subunit protein is detected.

20. The method of Claim 18, wherein the level of expression of *laminin α4*-specific mRNA is detected.

21. The method of Claim 20, wherein the expression level of laminin α4-specific mRNA is detected by measuring RNA.

22. The method of Claim 20, wherein the expression level of laminin α4-specific mRNA is detected by measuring cDNA.

23. The method of Claim 20, wherein a gene expression microarray is used to detect the level of expression of *laminin α4*-specific mRNA.

24. The method of Claim 18, further comprising detecting the overexpression of laminin β1 subunit protein or *laminin β1*-specific mRNA relative to the normal control.

25. The method of Claim 18, further comprising detecting quantitatively or semi-quantitatively in the sample a level of expression with respect to a normal control, of a gene encoding a protein selected from the group consisting of insulin-like growth factor binding protein precursor 3, transforming growth factor-β-induced gene, vascular endothelial growth factor, connective tissue growth factor, human insulin-like growth factor binding protein precursor 5, placental growth factor, transcription factor Ap-2, human insulin-like growth factor II, epidermal growth factor receptor, matrix metalloproteinase-2, keratin 18, vimentin, fibronectin 1, phospholipase A2 receptor, desmoplakin, tropomodulin, tenascin C, and collagen type IV α1 chain, or detecting a combination of expression levels for any of these.

26. The method of Claim 18, wherein the sample is a tumor tissue.

27. The method of Claim 18, wherein the sample comprises plasma.

28. A method of predicting the recurrence of a malignant tumor in a human subject from whom a tumor has been resected, comprising:

(a) obtaining a tissue sample from the human subject, said tissue sample being from a region adjacent to the site of the tumor;

(b) detecting quantitatively or semi-quantitatively a level of expression for laminin α4 subunit protein or *laminin α4*-specific mRNA in the sample; and

(c) comparing the expression level in (b) to a level of expression in a normal tissue control, wherein overexpression of laminin α4 subunit protein or laminin α4-specific mRNA, with respect to the control, is predictive of a recurrence of a malignant tumor in the subject.

29. The method of Claim 28, wherein the tissue sample is histopathologically normal in appearance.

30. The method of Claim 28, wherein the level of expression of laminin α4 subunit protein is detected.

31. The method of Claim 28, wherein the level of expression of *laminin α4*-specific mRNA is detected.

32. The method of Claim 31, wherein the expression level of *laminin α4*-specific mRNA is detected by measuring RNA.

33. The method of Claim 31, wherein the expression level of *laminin α4*-specific mRNA is detected by measuring cDNA.

34. The method of Claim 31, wherein a gene expression microarray is used to detect the level of expression of *laminin α4*-specific mRNA.

35. The method of Claim 28, further comprising detecting quantitatively or semi-quantitatively in the sample a level of expression with respect to a normal tissue control, of a gene encoding a protein selected from the group consisting of insulin-like growth factor binding protein precursor 3, transforming growth factor-β-induced gene, vascular endothelial growth factor, connective tissue growth factor, human insulin-like growth factor binding protein precursor 5, placental growth factor, transcription factor Ap-2, human insulin-like growth factor II, epidermal growth factor receptor, matrix metalloproteinase-2, keratin 18, vimentin, fibronectin 1, phospholipase A2 receptor, desmoplakin, tropomodulin, tenascin C, and collagen type IV α1 chain, or detecting a combination of expression levels for any of these.

36. The method of Claim 28, further comprising detecting the overexpression of laminin β1 subunit protein or laminin β1-specific nucleic acid relative to the normal tissue control.

37. The method of Claim 28, wherein the level of expression of laminin α4 subunit protein is detected.

38. The method of Claim 28, wherein the level of expression of *laminin α4*-specific mRNA is detected.

39. The method of Claim 38, wherein the expression level of *laminin α4*-specific mRNA is detected by measuring RNA.

40. The method of Claim 38, wherein the expression level of laminin α4-specific mRNA is detected by measuring cDNA.

41. The method of Claim 38, wherein a gene expression microarray is used to detect the level of expression of *laminin α4*-specific mRNA.

42. The method of Claim 28, further comprising detecting quantitatively or semi-quantitatively in the sample a level of expression with respect to a normal tissue control, of a gene encoding a protein selected from the group consisting of insulin-like growth factor binding protein precursor 3, transforming growth factor-β-induced gene, vascular endothelial growth factor, connective tissue growth factor, human insulin-like growth factor binding protein precursor 5, placental growth factor, transcription factor Ap-2, human insulin-like growth factor II, epidermal growth factor receptor, matrix metalloproteinase-2, keratin 18, vimentin, fibronectin 1, phospholipase A2 receptor, desmoplakin, tropomodulin, tenascin C, and collagen type IV α1 chain, or detecting a combination of expression levels for any of these.

43. The method of Claim 28, further comprising detecting the overexpression of laminin β1 subunit protein or *laminin β1*-specific nucleic acid relative to the normal tissue control.

44. A method of predicting the recurrence of a glioma in a human subject from whom a glioma has been resected, comprising:

(a) obtaining a tissue sample from the brain of the human subject, said tissue sample being from a region adjacent to the site of the glioma;

(b) detecting quantitatively or semi-quantitatively a level of expression for laminin α4 subunit protein or *laminin α4*-specific mRNA in the sample; and

(c) comparing the expression level in (b) to a level of expression in a normal tissue control, wherein overexpression of laminin α4 subunit protein or laminin α4-specific

mRNA, with respect to the control, is predictive of a recurrence of glioma in the subject.

45. The method of Claim 44, wherein the tissue sample is histopathologically normal in appearance.

46. The method of Claim 44, wherein the level of expression of laminin α4 subunit protein is detected.

47. The method of Claim 44, wherein the level of expression of *laminin α4*-specific mRNA is detected.

48. The method of Claim 47, wherein the expression level of *laminin α4*-specific mRNA is detected by measuring RNA.

49. The method of Claim 47, wherein the expression level of *laminin α4*-specific mRNA is detected by measuring cDNA.

50. The method of Claim 47, wherein a gene expression microarray is used to detect the level of expression of *laminin α4*-specific mRNA.

51. The method of Claim 44, further comprising detecting quantitatively or semi-quantitatively in the sample a level of expression with respect to a normal tissue control, of a gene encoding a protein selected from the group consisting of insulin-like growth factor binding protein precursor 3, transforming growth factor-β-induced gene, vascular endothelial growth factor, connective tissue growth factor, human insulin-like growth factor binding protein precursor 5, placental growth factor, transcription factor Ap-2, human insulin-like growth factor II, epidermal growth factor receptor, matrix metalloproteinase-2, keratin 18, vimentin, fibronectin 1, phospholipase A2 receptor, desmoplakin, tropomodulin, tenascin C, and collagen type IV α1 chain, or detecting a combination of expression levels for any of these.

52. The method of Claim 44, further comprising detecting the overexpression of laminin β1 subunit protein or *laminin β1*-specific nucleic acid relative to the normal tissue control.

53. A method of predicting recurrence of a glioma in a human subject from whom a glioma has been resected, comprising:

(a) obtaining a tissue sample from the brain of a human subject, said tissue sample being from a region adjacent to the site of the glioma, said sample comprising a cell expressing a plurality of mRNA species that are detectably distinct from one another;

(b) detecting quantitatively or semi-quantitatively an expression level for *laminin α4*-specific mRNA; and

(c) comparing the expression level in (b) to a level of expression in a normal tissue control, wherein overexpression of *laminin α4*-specific mRNA, with respect to the control, is predictive of a recurrence of glioma in the subject.

54. The method of Claim 53, wherein a gene expression microarray is used to detect the level of expression of *laminin α4*-specific mRNA.

55. The method of Claim 54, wherein the expression level of *laminin α4*-specific mRNA is detected by measuring RNA.

56. The method of Claim 54, wherein the expression level of *laminin α4*-specific mRNA is detected by measuring cDNA.

57. The method of Claim 53, further comprising detecting quantitatively or semi-quantitatively in the sample a level of expression with respect to a normal tissue control, of a growth factor-related gene encoding a protein selected from the group consisting of insulin-like growth factor binding protein precursor 3, transforming growth factor-β-induced gene, vascular endothelial growth factor, connective tissue growth factor, human insulin-like growth factor binding protein precursor 5, placental growth factor, transcription factor Ap-2, human insulin-like growth factor II, and epidermal growth factor receptor, whereby the relative aggressiveness of the glioma is predicted.

58. The method of Claim 53, further comprising detecting quantitatively or semi-quantitatively in the sample a level of expression with respect to a normal tissue control, of a structural gene encoding a protein selected from the group consisting of matrix metalloproteinase-2, keratin 18, vimentin, fibronectin 1, phospholipase A2 receptor, desmoplakin, tropomodulin, tenascin C, and collagen type IV $\alpha 1$ chain, whereby the relative invasiveness of the glioma is predicted.

59. The method of Claim 53, further comprising detecting the overexpression of *laminin* $\beta 1$-specific mRNA relative to the normal tissue control.

60. A method of classifying the grade of a malignant tumor in a human subject, comprising:

(a) obtaining a tissue sample from the human subject, said sample comprising a cell expressing a plurality of mRNA species that are detectably distinct from one another;

(b) detecting quantitatively or semi-quantitatively an expression level for at least two of the plurality of mRNA species, wherein at least one of the detected mRNA species is a *laminin* $\alpha 4$-specific mRNA and at least one is specific to a growth factor-related gene or to a structural gene other than a laminin gene;

(c) constructing an expression profile of the sample comprising a combination of the detected expression levels of *laminin* $\alpha 4$-specific mRNA and the at least one other mRNA species specific to the growth factor-related gene or to the structural gene other than a laminin gene; and

(d) comparing the expression profile in (c) to an expression profile for a normal tissue control, wherein overexpression of laminin $\alpha 4$-specific mRNA, with respect to the control, is indicative of the presence and relatively high invasiveness of the tumor in the subject, wherein overexpression of the structural gene other than a laminin gene is indicative of relatively high tumor invasiveness, and wherein overexpression of the growth factor-related gene is indicative of relatively high tumor aggressiveness.

61. The method of Claim 60, wherein the growth factor-related gene encodes a protein selected from the group consisting of insulin-like growth factor binding protein precursor 3, transforming growth factor-β-induced gene, vascular endothelial growth factor, connective tissue growth factor, human insulin-like growth factor binding protein precursor 5, placental growth factor, transcription factor Ap-2, human insulin-like growth factor II, and epidermal growth factor receptor.

62. The method of Claim 60, wherein the structural gene encodes a protein selected from the group consisting of matrix metalloproteinase-2, keratin 18, vimentin, fibronectin 1, phospholipase A2 receptor, desmoplakin, tropomodulin, tenascin C, and collagen type IV α1 chain.

63. The method of Claim 60, wherein the expression level of *laminin α4*-specific mRNA is detected by measuring RNA.

64. The method of Claim 60, wherein the expression level of *laminin α4*-specific mRNA is detected by measuring cDNA.

65. The method of Claim 60, wherein a gene expression microarray is used to detect the level of expression of *laminin α4*-specific mRNA.

66. The method of Claim 60, further comprising detecting the overexpression of *laminin β1*-specific mRNA relative to the normal tissue control.

67. The method of Claim 60, wherein the tissue sample is brain tissue.

68. The method of Claim 60, wherein the tumor is a glial tumor.

69. A method of classifying the grade of a malignant tumor in a human subject, comprising:

(a) obtaining a tissue sample from the human subject, said sample comprising a cell expressing a plurality of protein species that are detectably distinct from one another;

(b) detecting quantitatively or semi-quantitatively an expression level for at least two

of the plurality of protein species, wherein at least one of the detected protein species is a laminin α4 subunit protein and at least one is a growth factor-related protein or a structural protein other than a laminin protein;

(c) constructing an expression profile of the sample comprising a combination of the detected expression levels of laminin α4 subunit protein and the at least one other growth factor-related protein or the structural protein other than a laminin protein; and

(d) comparing the expression profile in (c) to an expression profile for a normal tissue control, wherein overexpression of laminin α4 subunit protein, with respect to the control, is indicative of the presence and relatively high invasiveness of a malignant tumoor in the subject, wherein overexpression of the structural protein other than a laminin protein is indicative of relatively high tumor invasiveness, and wherein overexpression of the growth factor-related protein is indicative of relatively high tumor aggressiveness.

70. The method of Claim 69, wherein the growth factor-related protein is selected from the group consisting of insulin-like growth factor binding protein precursor 3, transforming growth factor-β-induced gene, vascular endothelial growth factor, connective tissue growth factor, human insulin-like growth factor binding protein precursor 5, placental growth factor, transcription factor Ap-2, human insulin-like growth factor II, and epidermal growth factor receptor.

71. The method of Claim 69, wherein the structural protein is selected from the group consisting of matrix metalloproteinase-2, keratin 18, vimentin, fibronectin 1, phospholipase A2 receptor, desmoplakin, tropomodulin, tenascin C, and collagen type IV α1 chain.

72. The method of Claim 69, further comprising detecting the overexpression of laminin β1 subunit protein relative to the normal tissue control.

73. The method of Claim 69, wherein the tissue sample is brain tissue.

74. The method of Claim 69, wherein the tumor is a glial tumor.